R-Biopharm news
Food and Feed Analysis III/06

New Products

Allergen analysis

RIDASCREEN® Gliadin competitive (R7011) is a competetive enzyme immunoassay for the quantitative analysis of peptide sequences of prolamins from wheat (gliadin), rye (secalin) and barley (hordein) in food. The test kit has been developed for the investigation of starch, syrup and beer.

Celiac disease is a permanent intolerance to repetitive toxic peptide motifs of prolamins that causes damage to the small intestine, however the effects are reversible when gluten is avoided in the diet. During chemical modification of gluten or the enzymatic processes, whole molecules can be digested to smaller peptide fragments that can contaminate samples like starches, syrups and beer. Repeating motifs of peptide fragments can be toxic for celiac patients.

Single motifs cannot be detected by sandwich ELISA formats such as RIDASCREEN® Gliadin (R7001), because at least two epitopes (antigen binding sites) are necessary. In smaller peptide fragments only one epitope at the most is present and therefore a competitive ELISA has been developed for the detection of small peptide fragments.

Specifications:

Standard material:
The RIDASCREEN® standard material is calibrated to the QQPFP - sequence.

Sample preparation:
homogenisation and extraction

Time requirement for the preparation of 10 samples:
approx. 20 min

Test implementation (incubation time):
40 min

Limit of detection:
922 µg peptide / g food

Limit of quantification:
1250 µg peptide / g food

Specificity:
The monoclonal antibody used in the kit recognizes toxic motifs of gliadins from wheat and related prolamins from rye and barley.

Cross reactivity:
No cross-reaction with oats, corn, rice, millet, buckwheat, quinoa and amaranth.

RIDASCREEN®FAST Ei/Egg (R6402) is a Sandwich enzyme immunoassay in a 48 well format for the quantitative analysis of egg white proteins in food. The assay is an improvement of the present RIDASCREEN® Ei/Egg test (R6401).

Specifications in comparison	RIDASCREEN®FAST Ei/Egg (R6402)	RIDASCREEN® Ei/Egg (R6401)
Microtitre plate format	48 wells	96 wells
Sample preparation	homogenisation, extraction, centrifugation and filtration	homogenisation, extraction, centrifugation and dilution
Time requirement for the preparation of 10 samples	approx. 20 min	approx. 30 min
Test implementation (incubation time)	30 min	1,5 h
Standards	0 / 1 / 3 / 9 / 27 ppm egg white protein	0 / 2 / 6 / 18 / 54 ppm egg white protein
Limit of detection	0.6 ppm	< 2 ppm
Limit of quantification	1 ppm	2 ppm (sterilised foods can only be determined qualitatively)
Specificity of the antibodies	The specific polyclonal antibodies detect antigens from egg white proteins (ovalbumin, ovomucoid, ovotransferrin, lysozyme).	The used polyclonal antibody recognizes proteins in egg white.
	A cross reactivity of 0.0001 % to raw chicken meat exists.	Cross reactivity: roasted cashew nuts show a low cross reactivity of 0.0001 %. The assay is not suited for meat products made from chicken or turkey.

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RIDA®QUICK Hazelnut (R6803)
is an immunochromatographic test for the qualitative detection of hazelnut and portions of hazelnut in food such as cereals, baked goods, ice cream and chocolate. The test should be used for the detection of small amounts of hazelnut contamination. For single samples the test is particularly suitable. The evaluation is made visually with the control and test band. A positive result means that the sample has a hazelnut concentration of ≥ 5 mg/kg (ppm) hazelnut.

Specifications

Sample preparation:
homogenisation, extraction, and centrifugation

Time requirement for the preparation of 10 samples:
approx. 30 min

Test implementation (incubation time):
approx. 10 min

Limit of detection:
approx. 5 mg/kg (ppm)

Antibiotic analysis

RIDASCREEN® Chloramphenicol (R1505)
is a development of the RIDASCREEN® Chloramphenicol test (R1501). This kit is also a competitive enzyme immunoassay for the quantitative analysis of chloramphenicol in milk, milk powder, honey, shrimps, meat, fishmeal and eggs.

The RIDASCREEN® Chloramphenicol test (R1501) will still be available until the beginning of 2007 and will then be replaced by the new kit R1505.

Specifications in comparison	RIDASCREEN® Chloramphenicol (R1505)	RIDASCREEN® Chloramphenicol (R1501)
Microtitre plate format	96 wells	96 wells
Sample preparation	homogenisation, extraction, centrifugation and evaporation (milk: direct use in the assay is possible)	homogenisation, extraction, centrifugation and evaporation
Time requirement for the preparation of 10 samples	5 min to 2 h	10 min to 2 h
Test implementation (incubation time)	1 h 15 min	3 h
Standards	0 / 25 / 50 / 100 / 250 / 750 ppt Chloramphenicol	0 / 500 / 1500 / 4500 / 13500 / 40500 ppt Chloramphenicol
Limit of detection	milk: 5 ppt milk (direct use): 25 ppt milk powder: 25 ppt honey: 25 ppt shrimps, meat, fish meal: 6.25 ppt egg: 25 ppt	milk: 12.5 ppt milk powder: 50 ppt honey: 50 ppt shrimps, meat, fish meal: 12.5 ppt egg: 25 ppt
Recovery	milk: 80 % milk powder: 80 % honey: > 80 % shrimps, meat, fishmeal: > 80 % egg: > 80 %	milk: 80 % milk powder: 80 % honey: > 80 % shrimps, meat, fishmeal: > 80 % egg: > 80 %
Specificity of the antibodies	Chloramphenicol: 100 % Chloramphenicol base: 2 % Thiamphenicol: < 0.1 %	Chloramphenicol: 100 % Chloramphenicol base: 0.5 % Thiamphenicol: < 0.05 %

Mycotoxin analysis

RIDASCREEN® Ochratoxin A 30/15 (R1311)
This test was announced as a new product in the R-Biopharm News II/06 and has been available to purchase since July. In the initial phase both kits (the present RIDASCREEN® Ochratoxin A kit, R1301 and the new kit, R1311) will be offered in parallel but the R1311 kit will fully replace R1301 sometime in the near future.

The new RIDASCREEN® Ochratoxin A test offers the analyst two alternative sample preparations. For a rapid and easy screening test, the simple extraction with sodium hydrogen carbonate buffer is sufficient and the resulting detection limit is 2.5 ppb. For a more sensitive screening with a detection limit of 1.25 ppb, we recommend the sample preparation with dichloromethane.

To our products

RBR immunoaffinity columns: important changes to the instructions for use

R-Biopharm Rhône Ltd. would like to advise customers that there have been some improvements made to the instructions for use for all RBR immunoaffinity column test kits. The changes include some additional information on the quality system, product range and technical support service. There have also been some minor method changes to help standardise test procedures throughout the range. Please note that previous methods will continue to work perfectly since there have been no modifications made to the products themselves. We would advise that customers read the instructions to familiarise themselves with any changes before running the assays.

RIDASCREEN® Gliadin (R7001)

In the recent FAPAS report 2719, Gluten in Infant Cereal, it was noted that variations in the extraction procedure used by participants had resulted in an unusual distribution of results when using the RIDASCREEN® Gliadin (R7001) and RIDASCREEN®FAST Gliadin (R7002) test kits.
R-Biopharm has already recognised that in some cases discrepancies may occur when testing identical food samples with different extraction procedures.
The RIDASCREEN® Gliadin (R7001) and RIDASCREEN®FAST Gliadin (R7002) test kits are based on the R5 antibody, developed by Prof. Enrique Mendez, Spain. Recently Codex Alimentarius has endorsed the R5 antibody based ELISA test kit as a type 1 method.
One major acceptance criteria of the R5 ELISA method through Codex Alimentarius was a European ring trial, organised by the Prolamin Working Group, to investigate the performance of the R5 enzyme immunoassays to determine gliadin in gluten-free food. In this trial, sample preparations of heated and unheated samples have only been performed with the cocktail extraction method. To ensure consistency of extraction methods between laboratories, R-Biopharm has changed the instruction for use of the RIDASCREEN® Gliadin test (R7001) and recommends the cocktail extraction exclusively for all types of food samples. This is to follow scientific recommendations of Prof. Dr. E. Mendez as published and accepted by the Codex Alimentarius.
The RIDASCREEN® Gliadin (R7001) test kit already contains sufficient cocktail solution for analysing 42 food samples. For the RIDASCREEN®FAST Gliadin (R7002) test kit, which is normally recommended for analysis of unprocessed samples, the ethanol extraction can be used further on. If analysing processed samples the cocktail solution is available separately under Art. No. R7006.

VitaFast® – microbiological vitamin analysis

The VitaFast® range for the determination of vitamins B_1, B_2, B_6, B_{12}, folic acid, biotin, niacin and pantothenic acid can be used successfully in the analysis of vitamin premixes, fruit juices and baby food. The test is simple to perform and the test kit contains a microtitre plate, coated with microorganisms and all other reagents required such as medium, standards and sterile water.

FAPAS® Proficiency Test 2139

The Institute for product quality (ifp) in Berlin (producer of the VitaFast® tests) has recently participated in the FAPAS® ring trail "FAPAS® Proficiency Testing for Vitamins (Report 2139, Vitamins in Liquid Supplement, April – June 2006)". The excellent results are shown in the table below.

	Vitamin B_1 in µg / g	Vitamin B_2 in µg / g	Vitamin B_6 in µg / g
FAPAS® target concentration*	81.2	88.6	90.2
VitaFast®	86	82	95

* the target concentration is the statistical mean value of all participants

Analysis of fruit juices

The VitaFast® Vitamin B_2 test for example shows good results which are comparable with HPLC.

	VitaFast® Vitamin B_2 in mg / 100 ml	HPLC in mg / 100 ml
Fluid vitamin mix	8.3 (dilution 1:64)	8.0
	8.4 (dilution 1:120)	8.7

The reliability of the VitaFast® tests as VitaFast® Vitamin B_2 was also verified using spiked samples. Although the multi vitamin juice was labelled by the producers as containing a concentration of 0.8 mg Vitamin B_2 / 100 ml, VitaFast® detected a higher concentration of vitamins than that stated. This was probably due to the producer enriching the product with a higher dose of vitamin to account for deterioration over time.

	VitaFast® Vitamin B_2 in mg / 100 ml	Recovery (after spiking with 0.4 mg / 100 ml vitamin B_2)
Multi vitamin juice (0.8 µg / 100 ml)	1.1 (dilution 1:10)	98 %
	1.2 (dilution 1:20)	

Baby food

For example the VitaFast® Vitamin B_{12} test shows very good results for both cereals and milk porridge. The following table show the target concentrations compared with the VitaFast® results.

Vitamin B_{12}	Cereals	Milk porridge
Target concentration in µg / 100 g	0.58	0.26
VitaFast® results in µg / 100 g	0.53	0.29

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New application notes

Some new application notes are now available on request:

Ochratoxin A in paprika:
- for RIDASCREEN® Ochratoxin A 30/15 (R1311) in combination with the OCHRAPREP® immunoaffinity columns (RBRP14/P14B)

- for RIDASCREEN®FAST Ochratoxin A (R5402) in combination with the OCHRAPREP® immunoaffinity columns (RBRP14/P14B)

Aflatoxin in paprika powder, chili powder and pepper
- for RIDA®QUICK Aflatoxin (R5204)

Aflatoxin in nutmeg and ginger
- for RIDA®QUICK Aflatoxin (R5204)

Clenbuterol in hair
- for RIDASCREEN® Clenbuterol (R1705) and RIDASCREEN® Clenbuterol Fast (R1701)

Clenbuterol in cattle eye
- for RIDASCREEN® Clenbuterol (R1705) and RIDASCREEN® Clenbuterol Fast (R1701)

Chloramphenicol in Royal Jelly
- for RIDASCREEN® Chloramphenicol (R1505) and RIDASCREEN® Chloramphenicol (R1501)

General information to our products

1. We are currently in the stages of replacing brown glass bottles (blue caps) with brown plastic bottles (brown caps) for the substrate/chromogen solution (Red Chromogen, Red Chromogen Pro, stained red) in some products. We kindly ask you to be patient as we continue to introduce these changes to all of our products.

2. It is important in mycotoxin analysis, that when using the RIDASCREEN®FAST range of tests, sample extracts have a neutral pH value in the range of 6.5 - 7.5. If samples are out with this range, we recommend neutralising the sample extract as this optimises the antigen-antibody reaction, which is the basis of the ELISA principle.

If you are interested

in our products, please contact your local distributor for more information.

The next R-Biopharm[news] will be published during the IV. quarter 2006

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